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Agenda item 2 (b)

PREPARATIONS FOR THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT ON THE BASIS OF GENERAL ASSEMBLY RESOLUTION 44/228 AND TAKING INTO ACCOUNT OTHER RELEVANT GENERAL ASSEMBLY RESOLUTIONS: RELEVANT ACTIONS OF INTERGOVERNMENTAL AND OTHER BODIES OF RELEVANCE TO THE PREPARATORY PROCESS

Letter dated 10 February 1992 from the Chairman of the Fourth South Pacific Regional Environment Programme Intergovernmental Meeting and Permanent Representative of Fiji to the United Nations addressed to the Secretary-General of the United Nations Conference on Environment and Development

I submit herewith the report titled "The Pacific Way: Pacific Island Developing Countries: Report to UNCED" (see annex 1/).

This report has been prepared as part of the South Pacific region's intergovernmental preparations for the Conference. Based on national reports for the Conference it contains a record of the common concerns and consensus positions of Pacific Island Developing Country members of the South Pacific Regional Environment Programme (SPREP). The participating countries were: Cook Islands, Federated States of Micronesia, Republic of Fiji, Kiribati, Republic of Marshall Islands, Niue, Palau, Papua New Guinea, Solomon Islands, Tokelau, Tuvalu, Tonga, Vanuatu and Samoa.

I would be most grateful if you would circulate the report as official document of the fourth session of the Preparatory Committee for the Conference.

(Signed) Manasa K. SENILOLI
Permanent Representative

1/ The annex is circulated in the language of submission only.

ANNEX

The Pacific Way

Pacific Island
Developing Countries' report to the
United Nations Conference on Environment & Development

PIDC *report to* UNCED

Prepared by the South Pacific Regional Environment Programme
with the financial assistance of the Asian Development Bank &
the United Nations Development Programme

This report has been made possible through the hard work and guidance of the National Task Forces established for our UNCED preparations. The Chairpersons of these Task Forces were:

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Permanent Secretary, Department of Prime Minister

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Secretary, Department of Environment & Conservation

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Countries of the South Pacific Regional Environment Programme (SPREP)

SPREP consists of 27 members: 24 regional members shown above and 3 metropolitan countries — France, the United States of America and the United Kingdom of Great Britain and Northern Ireland. For the purposes of these preparations for UNCED, 14 have been classified as Pacific Island Developing Countries. The 14 countries that have participated in the finalisation of this report include:

Cook Islands

Federated States of Micronesia

Republic of Fiji

Kiribati

Republic of Marshall Islands

Niue

Palau

Papua New Guinea

Solomon Islands

Tokelau

Tonga

Tuvalu

Vanuatu

Western Samoa

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LETTER FROM THE CHAIRMAN

Fourth SPREP intergovernmental meeting

We can see the environmental consequences of poor development. We also know that the persistent neglect of environmental issues can over the long term limit the opportunities for economic development in many Pacific Island countries. This has led to an increasing awareness among the South Pacific governments that environmental management and economic development are inextricably linked.

At a regional level, this awareness is part of an ongoing commitment to action on environmental matters. Countries of the South Pacific have demonstrated that they have many common concerns regarding environment and development and are in the process of strengthening the role of the South Pacific Regional Environment Programme (SPREP). But although considerable advances have been made in terms of environmental management in recent years, not enough has been done to bring environment and development concerns together with economic planning and decision-making. This is clearly a challenge for our region if we are to ensure that our way of life, our cultures, our economies and our environments can be sustained for the generations to come. The following report, *The Pacific Way*, contains the priorities for sustainable development and those actions Pacific Island Developing Countries recognise are necessary to turn our commitment into reality.

The path to sustainable development for the South Pacific will not be possible, however, without the political will and co-operation of countries outside the region. Global environmental problems such as climate change and associated sea level rise, which have their root causes outside our region, threaten the land and ocean resources upon which Pacific island people and economies so heavily depend. Indeed, problems such as climate change threaten the very existence of small island nations in the Pacific. A lack of appropriate legislation, and of human, technical and financial resources will also slow us on the path to sustainable development. These are at the very heart of the difficulties we will face.

The United Nations Conference on Environment and Development (UNCED) aims to reverse the trends towards environmental degradation and establish the basis for a sustainable way of life. It is our collective responsibility to ensure that these necessary 'steps' and the 'way of life' the United Nations speaks of is relevant to the South Pacific. Individual island countries, and the South Pacific region as a whole, have a uniqueness and a significance that must be reflected in the preparations and outcomes of UNCED. I strongly urge all those striving to achieve the UNCED objectives to work with us in making sustainable development a reality in the Pacific.

Ratu Ovini Bokini
Minister for Housing and Urban Development, Fiji

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FOREWORD

Our Pacific island countries are collectively responsible for a significant proportion of the Earth. We do not take this responsibility lightly and therefore have put considerable effort into our preparations for the United Nations Conference on Environment and Development (UNCED). In the true spirit of regional co-operation, our preparations have been a team effort.

At our third Inter-governmental Meeting in Noumea, New Caledonia, 1990, members of the South Pacific Regional Environment Programme (SPREP) called for assistance in their preparations for UNCED. We have come a long way since this meeting. National Reports, compiled by National Task Forces of government officials, consultants and non-government organisations, have been submitted to the UNCED Secretariat along with our regional contributions — the *Ministerial Declaration on Environment and Development* and *Regional Statement to the Third UNCED Preparatory Committee Meeting*. These are now the foundation for this report, *The Pacific Way: Pacific Island Developing Countries' Report to UNCED*. The final structure and content of this report, which focuses on the island countries of our region, were agreed upon at the Second Workshop on South Pacific Preparations for UNCED, Port Vila, 21–23 October 1991, and subsequently reviewed by participating countries.

Here we present a summary of the issues and constraints to sustainable development alongside the island country consensus on the priorities for further action. A second document, *Environment and Development: a Pacific island perspective*, contains a valuable synthesis of National Reports and relevant additional information concerning sustainable development in the region. These two documents are the culmination of considerable effort and they owe much to many people.

Special thanks must go to the financial assistance of the Asian Development Bank (ADB) and the United Nations Development Programme (UNDP). Support, both financially and in kind, from our Australian and New Zealand partners and by UNDP allowed Pacific island countries to participate in meetings of the UNCED Preparatory Committee.

Countries are continuing this work by drafting National Environment Management Strategies over the next 18 months. I hope that this effort will stimulate an appreciation of the concerns and aspirations of this unique region and encourage all to work with us in making sustainable development a reality in the Pacific.

Vili A. Fuavao

Director of SPREP

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chapter 1

THE SETTING

...the object of the exercise of 'sustainable development' is to survive on the atolls forever.... Sustainability is the idea that we can survive from day to day, and ...ever after!

Hon. Ieremia Tabai, GCMG
Secretary-General, Forum Secretariat
(former President of the Republic of Kiribati)

OUR COMMITMENT

This Report is the voice of fourteen Pacific Island Developing Countries (PIDCs) who are members of the South Pacific Regional Environment Programme (SPREP). It does not represent the views of our developed partners in the region nor directly those of their territories, although they have all participated in the evolution of many consensus positions on sustainable development in our region. What follows is a record of ***issues and constraints*** for sustainable development and ***priorities for further action*** that we see as fundamental to the long-term survival and enhancement of our region.

A scattered community

As a region we can be characterised as islands and groups of islands sharing a common thread of evolutionary and human history. Mostly isolated from one another by hundreds if not thousands of kilometres, our island people have developed unique cultures and attitudes of self-reliance. Many of us occupy some of the smallest habitable land areas on earth and we are vulnerable to natural and human-induced disturbance of both local and global environments. We are also bound by our extreme dependence on climate, physical characteristics and biological resources of sea and land.

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We Pacific Islanders share a common aspiration for economic development and improved living standards for our people. For thousands of years we have lived a relatively sustainable way of life in our island environments at a fairly low level of material well-being — a level which we no longer consider adequate. We are strongly committed to maintaining the harmony which has characterised Pacific island peoples' relationship with their environment; we do not want the pursuit of material benefits to undermine our cultural systems and values nor to cause any permanent harm to the land and marine resources which have allowed us to sustain island life for many centuries. Therein lies our dilemma.

As on all islands the environmental consequences of ill-conceived development can have catastrophic effects. The recent human history of our region contains examples of entire islands rendered uninhabitable through environmental destruction by human beings. Unsustainable development threatens not only the livelihood of island people but also the islands themselves and the cultures they nurture.

These considerations naturally draw us together to seek action on global environmental issues which threaten the countries in our region. Climatic disruption and potential sea level rise are issues of grave concern. Similarly our reliance on the region's biological resources is threatened by the patterns of large-scale exploitation of marine and terrestrial living resources; concern to avoid the catastrophic effects of climate change and to conserve our wealth of species and ecosystems underlies our interest in negotiations towards global conventions on climate change and the protection of biological diversity.

Consensus — a way of life

Though scattered, the island countries of the South Pacific are a close-knit family. Our co-operative approach to regional development is merely an extension of home-grown processes of government which have traditionally placed very high value on co-operation and the consensus approach to problem resolution.

Our co-operative efforts towards ecologically sustainable development are shown by the consensus statements that are the foundation of this report:

- *SPREP Ministerial Declaration on Environment and Development*
  Noumea, New Caledonia, 8–9 July 1991;
- *South Pacific Regional Statement to the Third Meeting of the UNCED Preparatory Committee*
  Noumea, New Caledonia, 8–9 July 1991;
- *1991–1995 Action Plan for Managing the Environment of the South Pacific Region*
  Noumea, New Caledonia, 8–9 July 1991;
- *Forum Communiqué, Twenty-second South Pacific Forum*
  Pohnpei, Federated States of Micronesia, 29–30 July 1991.

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SPREP, through its Action Plan and work programme, has proven to be an effective intergovernmental forum for developing consensus on environmental issues and for achieving the region's environmental objectives. This institutional base has two new pillars:

- *the Convention on Conservation of Nature in the South Pacific* (Apia Convention);
- *the Convention for the Protection of the Natural Resources and Environment of the South Pacific Region* and its two protocols (SPREP Convention).

Both of these Conventions entered into force in 1990 and are administered by SPREP. They are complementary and provide the South Pacific with a legal foundation on which to build national and regional environment programmes.

Towards UNCED

Our drive towards economic self-reliance is central to the social and economic development of the region. Our co-operative history of development and our consensus approach to problem resolution mean that the goal of sustainable development to which we are committed has every chance of being attained. SPREP, the South Pacific Commission and the South Pacific Forum are all intergovernmental bodies in the region that, through this consensus approach, have been important to our preparations for UNCED. But we also appreciate that this is not a goal we can hope to achieve on our own. We recognise that the achievement of our goal will require close co-operation with other regions of the world and the continued assistance of the international community. We are ready to play our part.

Keen for our voice to be heard along with those of our neighbours, we have participated actively in the UNCED process. We see UNCED as a significant step towards striking a balance between the absolutes of protection of the environment on the one hand and the imperatives of economic development on the other.

THE REGION

The South Pacific is unique, not because our geographical, biological, sociological and economic characteristics are found nowhere else in the world, but because of the combination of these characteristics within our region. The South Pacific is characterised by small land masses dispersed over part of the world's largest ocean; a high degree of ecosystem and species diversity; an extraordinary level of endemicity; a high degree of economic and cultural dependence on the natural environment; vulnerability to a wide range of natural disasters; and a diversity of cultures and languages, traditional practices and customs which are central to the close and special relationship of Pacific peoples with their environments.

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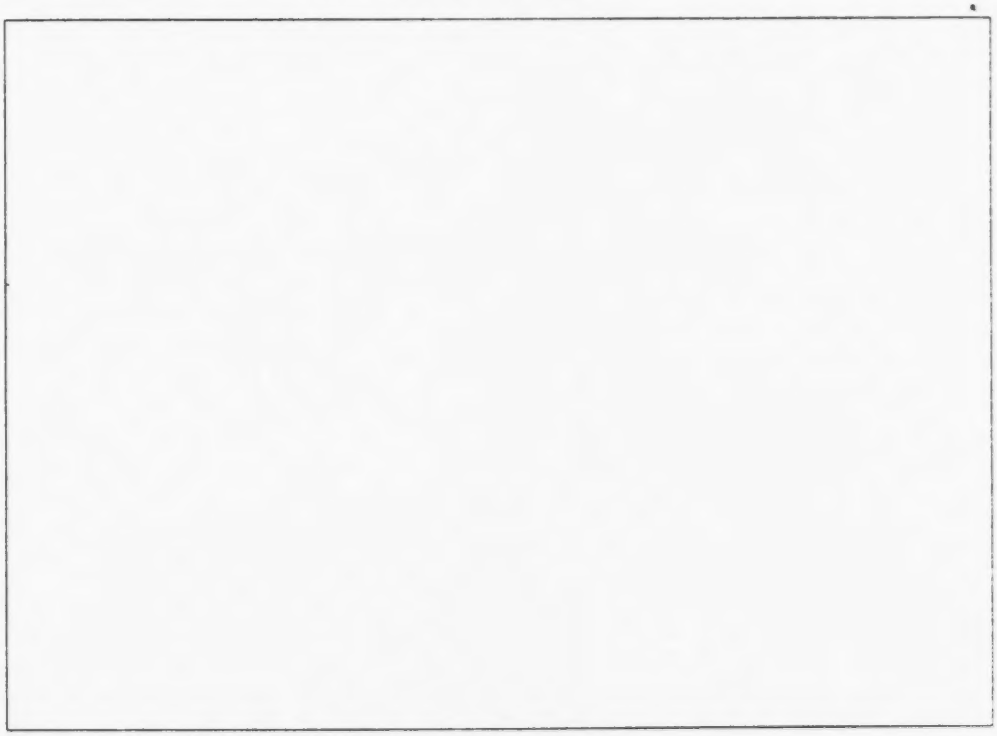
As a region we are custodians of a large portion of the earth's surface. Our combined Exclusive Economic Zones (EEZs) occupy 30 million square kilometres of the Pacific ocean — an area more than three times larger than the United States of America or China, and ten times the size of India. But the land area is only 1.8 per cent of that total. With an estimated population of only 5.8 million, our capacity to protect our fragile environments against damage from both internal actions and external influences is constrained. However, we accept the responsibility placed on our numerically small community as it is essential for the sustainable development of our region and the world as a whole.

Culture, custom & language

Melanesia, Micronesia and Polynesia are three ethnic groupings that have practical significance in the region. Important systems of authority vary between these groupings. Melanesian positions of authority are taken by the dominant members of the society. Polynesian chiefs are determined by patrilineal descent, whereas the Micronesian system of chiefs is commonly matrilineal.

Cultural groupings in the region



Melanesia *Micronesia* *Polynesia*

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Effective communication is an obvious prerequisite for sustainable development. While English or French is the official language of commerce and trade throughout the region, these are commonly the second or third languages of the people. But there is strong concern in some countries that English is gaining ascendancy over local languages through the growing influence of television and videos. The preservation of local languages is vital for the transfer of traditional knowledge to succeeding generations. This takes considerable effort, particularly in Melanesia where, for example, more than 700 separate languages are said to be spoken within Papua New Guinea (PNG) and well over 100 in both Solomon Islands and Vanuatu.

Traditional knowledge and practices have major relevance for environmental protection. In customary land tenure situations (which exist in all independent Pacific island countries except the Kingdom of Tonga), a large degree of communal control is retained over land use and the exploitation of natural resources. In addition to this, special prohibitions can be imposed on certain practices or the harvest of certain species or areas. In some countries where the authority of chiefs has been eroded, such conservation practices are either no longer fully applied or not enforced.

Land tenure systems vary throughout the region but are commonly based on communal land ownership patterns. In some countries, negotiations on land use, such as the harvest of a forest, are not undertaken through national or provincial governments, but directly between the proponents of the economic venture and the custom landowners; the degree of on-site environmental control which government agencies have been able to exert has, in practice, been quite restricted.

Physical diversity

Our island countries vary greatly in their physical and economic characteristics and in their resource endowments. The Melanesian countries of Fiji, New Caledonia, PNG, Solomon Islands and Vanuatu are extensions or parts of undersea mountain ranges. They comprise large, rugged, mainly volcanic islands which are generally rich in natural resources. They have relatively fertile land, mineral wealth and abundant living marine and terrestrial resources.

Micronesia and Polynesia are made up of countries comprising small islands groups. The Cook Islands, the Federated States of Micronesia (FSM), Tonga, Western Samoa have some volcanic islands with rich soil; most of the islands are small isolated atolls with poor soil. Among these are Kiribati, the Marshall Islands, Tokelau and Tuvalu, where the highest elevation does not exceed five metres and is commonly between one and two metres. The seas of Polynesia and Micronesia are generally rich in living resources and reported to have significant prospects for exploitable non-living resources; but apart from these, the natural resources of these island groups are severely limited.

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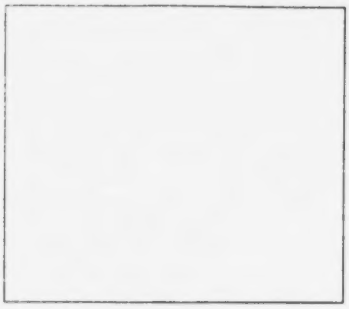

Economic fragility

The economies and the environments of many of the Pacific island countries are extremely fragile. They are fragile not only in relation to the global economy but also because of their vulnerability to natural disasters such as cyclones. Substantial trade deficits occur annually and can be sustained only with large continuing inflows of finance from abroad. In these countries, particularly Polynesia, remittances from overseas residents are a very important part of the economy. The other sources of foreign exchange for these countries are export earnings from agricultural produce (mainly copra), artefacts, and fees from foreign deepwater fishing nations for fishing rights to EEZs.

Agriculture and fishing remain the main activities of the islands and for some represent the sole sources of export income. Tonga, Western Samoa and the Cook Islands export a wide range of agricultural products. For Fiji, sugar is a major export, while in Papua New Guinea, coffee, cocoa, palm oil, rice and copra are all important agricultural exports. Elsewhere in the Pacific, copra and other coconut products are the main agricultural exports, although market conditions have forced large reductions in the output of most countries.

The isolation and dispersion of people coupled with a lack of basic infrastructure in the South Pacific mean that transport, communication and servicing costs are disproportionately high compared with other regions which are much closer to their export markets and sources of imports. Consequently the costs of these components in development co-operation programmes are extraordinarily high.

Subsistence and monetary economies exist side by side throughout the Pacific. At present the subsistence economy predominates and is likely to do so for many years. At the same time, all aspire to the material benefits which could flow from a monetary economy. The risk is that support for monetisation will diminish the ability of the subsistence economy to continue to provide basic foods and other needs traditionally obtained from forest, garden and sea. Integrating the monetary and subsistence economies is a dilemma that is being faced on the path to sustainable development in the Pacific.

This setting is central to understanding the future of sustainable development in the Pacific. Without an appreciation of the physical and cultural characteristics which make us unique all discussion of the Pacific's future will be fruitless. The issues and constraints detailed in the following chapter are based on our analysis of the region in those terms and our commitment to its preservation for generations to come.

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chapter 2

ISSUES & CONSTRAINTS

...our islands have finite carrying capacity for their human populations. Clearly we need to recognise the physical limitation of our island homes, as well as identifying the unique opportunities which they offer, if we are to attain the social and economic goals which we set for this last decade of the 20th Century.

Hon. Berenado Vunibobo
Minister for Trade and Commerce, Fiji

The following fourteen issues are seen as those of most concern to our region. The order of discussion of these issues does not imply any order of priority. The discussion of these issues and constraints is based on National Reports compiled by countries of the region in preparation for UNCED.

CLIMATE CHANGE & SEA LEVEL RISE

Global warming and sea level rise are the most serious environmental threats to the Pacific region. Island countries are particularly vulnerable, because they include many hundreds of low-lying islands and atolls, house most of their populations and many important economic activities in coastal zones, depend on extremely scarce supplies of potable groundwater, have very limited areas of arable soil, and are at great risk from extreme natural events — for example, cyclones, droughts, earthquakes, volcanic eruptions and tectonic movements.

The uncertainty

The amount and rate of rise in sea level remain uncertain and this adds to our concern, as does the feeling of helplessness in the face of an environmental impact not of Pacific origin. The Intergovernmental

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Global warming and sea level rise are the most serious environmental threats to the Pacific region

Panel on Climate Change predicts a sea level rise of 3–10 cm per decade, with a most likely rise of 6 cm per decade; on that basis, the sea level will rise by 20 cm by the year 2020, with a range of between 40–110 cm by the end of the next century. Any attempt to comprehend the possible effect of such estimated increases on our atolls, which have a maximum elevation rarely exceeding five metres above mean sea level, must take into account the impact on rising sea levels of cyclones and storm surges, king tides, and sea level fluctuations associated with El Niño effects. As an illustration of our vulnerability, in 1990 and again in 1991, the largest king tides of the year in the Marshall Islands almost inundated Majuro's urban area.

Projected relative effects of climate change & sea level rise in the region (after Pernetta 1990, UNEP Regional Seas Reports and Studies No. 128*)*

Possible profound impacts (may result in these states ceasing to exist)

Severe impacts (will cause economic & social disruption with inter-island movement of populations and emigration)

Moderate to severe impacts

Impacts locally severe to catastrophic

/...

Our vulnerability

The likelihood of sea level rise is a basic consideration for any development planning in the Pacific atolls and other low-lying islands. Even if protective coral reefs continue to grow upwards at a rate equal to that of the rising seas, the coastline will become more prone to erosion, coastal engineering structures will be threatened, and the construction of new infrastructure near the shore placed at great risk. There will be loss of mangrove forests, of agricultural areas and fuelwood resources. Rising temperature would affect coral mortality, seagrass beds would be lost, and inshore fishing productivity may decline.

Sea level rise will affect crop productivity as salt water intrudes upon supplies of fresh groundwater

A particularly serious effect of rising sea level for the atolls is the likely impact on freshwater lenses underlying the atolls. The risk of salt water intrusion will rise as sea level rises, lateral leakage increases, and the lens becomes thinner; already scarce freshwater resources will be lost or at least at very grave risk. As the sea level rises further, salt water will move within reach of pump intakes of groundwater wells, the roots of coconut palms and other tree crops, and of the common atoll staple of pit-grown taro.

Tied to the concerns for physical and social well-being are fears of serious economic consequences; foreign sources of risk capital are not expected to make long-term investments in low-lying areas of the region.

POPULATION

Many resource and environmental concerns can be traced to high population densities and the continuing high rate of population growth. For the atoll nations, finding ways to stem or reduce overpopulation is fundamental to achieving sustainable development.

Rapid growth

The net population growth of the region is high with natural rates of population increase well over 2 per cent, in some countries over 3 per cent and even reaching 5 per cent in Wallis and Futuna. Population can therefore be expected to at least double over the next 20 years. Birth control, however, is not generally an option in the current socio-political context, particularly in those countries where strongly held religious views on artificial birth control and the prestige attached to having large families combine to ensure very rapid population growth.

Urbanisation

Population problems are generally highly localised and often associated with urbanisation and growth in established population centres. In the capitals of atoll nations, population density is phenomenally high — that of Tarawa, Kiribati, rivalling the density of Hong Kong and Ebeye Island in the Marshall Islands having a population density of 23,200 per sq km.

Throughout the region, people are on the move: from the mountains to the coast, from the outer islands to the provincial or national seats of government, and from rural areas to urban centres. Inadequate school, medical and other facilities on outer islands virtually force parents to migrate to national or provincial capitals in order to provide their children with a better start in life.

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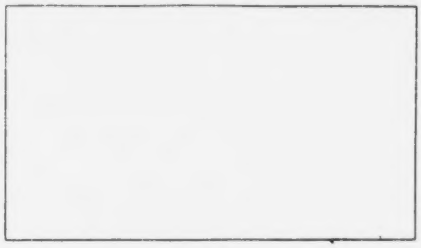
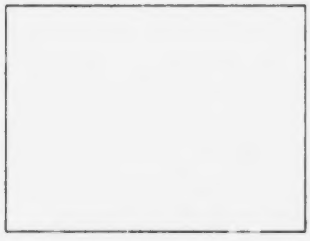


Rapid urbanisation and the growth of established population centres often place a strain on existing housing and infrastructure

This demographic adjustment is proceeding so fast that governments simply cannot keep pace with facilities and services. The rate of urban growth within a limited area produces severe population pressures. In such crowded situations many of the tensions of life usually associated with the tenements of a major metropolitan city are seen, including in some countries high rates of suicide, high and growing crime rates and low life expectancy. Tensions may even be higher, because they are compounded by fewer services, less infrastructure, and higher costs of living, with low wages and high unemployment rates; water is scarce and groundwater often polluted, toilets few, solid waste disposal limited and hence intestinal diseases, and ear and eye infections prevalent. At the same time medical and dental services are limited and hospitals understaffed and under-equipped.



A high proportion of the region's population is found in rural areas, particularly in Melanesia

Land is not available under custom ownership laws for development of housing estates, and shanty towns of squatters develop; valuable agricultural land is lost, and forests, lagoons and reefs are further degraded. The disposal of liquid and solid waste becomes an apparently insurmountable problem even in those countries where land could conceivably be available for the operation of managed garbage dumps.

However, this urbanisation picture must be kept in balance. In the larger South Pacific countries, such as PNG, Solomon Islands and Vanuatu, with adequate untapped productive land, the proportion of people living in urban centres is still low. PNG is only 15–20 per cent urbanised. Hence although the problems of urbanisation also occur in these countries, they are relatively less important in terms of total population.

Emigration

Only in those smaller countries where special emigration arrangements with metropolitan countries exist, such as American Samoa, Cook Islands, Niue and Tokelau, are some, and then only some, of these problems avoided or mitigated. In effect the problems are exported. But even in Tonga, where emigration reduces the net annual population growth rate to 0.2 per cent, some of these problems still exist because of internal migration, particularly from outer islands to the main island of Tongatapu; on Tongatapu the people move from its rural areas to the capital city, Nuku'alofa.

For a few countries, a substantial loss of population through emigration to metropolitan centres and countries creates severe human resource shortages — for example, it is difficult to hire labour for agricultural activities in Tonga even for relatively attractive rates of pay.

/...

ECONOMIC POTENTIAL, UNEMPLOYMENT & POVERTY

Economic potential

The economic characteristics of our South Pacific nations vary largely according to resource endowments, consumption patterns and the institutional capacity to support such development. Compared with the rest of the region, the Melanesian countries are resource-rich; PNG, when compared with the other Melanesian countries, is particularly fortunate in its marine resources and mineral wealth: the Lihir goldmine, on which development is expected to commence in 1992, will be the richest in the world, while the recent proven oilstrike in the Kutubu area could place PNG in the forefront of oil suppliers to the South Pacific region. Gold is an important export for Fiji and gold deposits have been discovered in Solomon Islands and Vanuatu. Timber production is a significant export earner in Fiji, PNG and Solomon Islands and all Melanesian countries have abundant non-living and living marine resources within their EEZs.

At the other extreme, the atoll nations are poor in natural resources, their sole major economic development opportunity being confined to the marine resources of their largely untapped EEZs. In some instances the economic prospects may be brightened by some increase in tourism, but the difficulty and high cost of access to most of the atolls for international tourists may limit their prospects.

Between the Melanesian and atoll extremes of natural resource wealth, Western Samoa, Tonga and FSM are diversifying their predominantly agricultural economies into light manufacturing and tourism. Adding export value to existing agricultural and marine produce is receiving greater attention as is the development of markets for specialty products.

The nature of development and economic potential is largely determined by island type

Unemployment

The economic limitations of the atoll nations, and to some extent other Pacific nations as well, are aggravated by rapidly increasing populations with a high and growing proportion of young people unable to find paid employment in the cash economy. The working age population is growing rapidly but generally it lacks the vocational and technical skills needed for modern service and production activities.

This pattern is repeated in a number of South Pacific countries. Unemployed youth are mostly found in national or provincial capitals where even the prospect of employment in the subsistence economy is denied them. As a result, where migration is not a real prospect, an ever-increasing proportion of government funds is necessarily earmarked for social service needs, with less available for initiatives to stimulate economic development. Infrastructural development becomes more dependent on foreign aid and, as the numbers of dependent, unemployed youth increase, funding becomes more constrained and cannot even meet basic recurrent costs.

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Poverty

Poverty is an emerging issue in a number of Pacific island countries. Urbanisation and the shift to a monetary economy are part of the problem, particularly in the resource poor countries, with the threat to the viable subsistence lifestyles and the rapid depletion of natural resources through over-exploitation. This should be understood and addressed against the background of traditional lifestyles and economic change. While conventional economic and social indicators demonstrate that a significant percentage of Pacific island populations are at poverty level, many communities still enjoy a high degree of subsistence affluence obtained from traditional resource management systems. For many of our people, health and general social indicators of poverty, not purely economic ones, tell the real story.

Environmental health

Small isolated communities are particularly vulnerable to the rapid spread of infection and to the adverse effects of local environmental degradation. In the Pacific island countries, environmental health problems are strongly linked to the supply and quality of fresh water and to the introduction of contaminants into the general environment. Where there are problems with the disposal of liquid and solid wastes, sanitation is poor, and diarrhoea and other gastro-intestinal problems are prevalent, particularly where groundwater supplies are polluted. Skin and eye diseases such as conjunctivitis and trachoma are common in some countries due to poor personal hygiene and inadequate water supplies.

Diseases & disorders

A high incidence of nutritional disorders and nutrition-related non-communicable diseases has emerged. These are seen as major environmental health issues and are often part of the urbanisation process. This is due to the deterioration of traditional wildfood and agricultural systems and their replacement by imported processed foods plus, in some countries, a high intake of alcohol. There is a very high intake of sugar, with sugar consumption on Tokelau, for example, reported as one kilogram of sugar per person per week. An increasingly sedentary lifestyle combined with imported 'convenience' foods is associated with increases in such diseases as hypertension, cardio-vascular disease, diabetes, hyperuraemia and some forms of cancer. Arthritis, gout and cirrhosis are all on the increase.

Nutritional disorders have emerged [illegible] through a combination of factors [illegible] replacement of traditional foods [illegible] foodstuffs

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Toxic & hazardous wastes

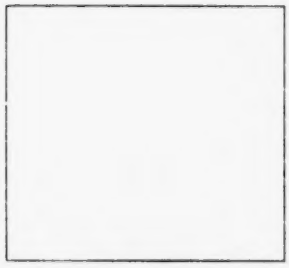
The history of waste disposal in the region has led to a growing awareness of the danger this poses to the Pacific environment and the health of its people. However, the region in general has no capacity for monitoring the pollution from toxic or hazardous substances. This is seen in inadequate laboratory facilities and the lack of trained field sampling and analytical laboratory staff. An area of particular concern is the monitoring of residual biocides (fungicides, pesticides, nematicides, agaricides, etc.) in plant tissue and soil at the production stage and in water and food at consumption. In those countries wishing to promote tourism, such monitoring systems are vital to maintaining a reputation as a safe tourist destination.

An area of particular concern is the monitoring of biocides in the environment and in foods being consumed

Another concern is for the control of the importation, storage, sale, safe use and disposal of these biocides. Pacific countries have considerable scope for strengthening their administrative arrangements in this area. However, a fundamental requirement rarely met is for the labels on biocides to be printed in the main local or common language, or for the distribution with the product of local language leaflets at the point of sale. Little biocide is used within village gardening systems, but where local use is high (such as in coffee-growing areas of PNG), literacy levels are often low.

EDUCATION & PUBLIC AWARENESS

Nothing has higher priority in the development strategies of Pacific countries than the education and training of our young people and much effort has been directed to this end over the past decade. Literacy is increasing, with some countries reporting a primary school enrolment (but not necessarily attendance) of nearly 100 per cent. However, literacy is still far from universal. The literacy rate in PNG is reported as being only 30 per cent.



The education and training of the region's youth will be fundamental to sustainable development

There are many concerns about the quality of formal education and a frequently expressed need for greatly increased effort in vocational training, apprenticeships programmes and other on-the-job, skill-learning opportunities. Environmental education is one facet of the broader education process and throughout the region there is considerable emphasis on education on environmental issues, both within the formal education system and for the general public. However, it has been found that the subject area remains a low priority. The two main problems that have been identified are (a) the motivation of teachers and their attitude towards environmental subject matter and (b) the lack of teachers who are well-informed about the environment.

Most teaching materials are derived from the industrialised nations, few deal with local issues or are available in local languages; this makes communication of local problems and of sound management practices at the village level more difficult.

The role of women & youth

In many PIDCs, women are traditionally the day-to-day managers of many of the region's natural resources. Women are also the primary agents for imparting environmental knowledge and awareness to their families as, from their earliest years, children accompany their mothers in their daily tasks. This role continues despite changes in lifestyle and changes in values accompanying the modern formal education system. Of course ignorance still exists among Pacific island youth. For example, a lack of understanding of the ecological and cultural importance of trees has been a significant cause of agrodeforestation.

While traditional knowledge can be passed on in this way, the reality is that women are rarely consulted about the use of resources and important environmental information does not flow readily to these groups. Unless access to environmental information is provided to both women and youth, sustainable development cannot become a reality.

The essential economic and resource management roles played by women and youth in the region cannot be over-emphasised

Increased reliance on the global economy

A common feature in the Pacific is the rapid rate of increase of imported goods to satisfy the growing demand for consumer goods and other benefits of trade. The subsistence life is highly self-sufficient, with perhaps some marginal trading of produce or other goods above immediate family needs. This may take the form of direct bartering or a form of cash economy, either in modern currency or traditional money such as the shell money (toea and kina) of PNG. But as demands for cash grow to pay for children's education, or to purchase those material goods once viewed as luxuries but now seen as essentials, or to buy imported convenience foods and beverages in bottles and cans, the subsistence production system alone is no longer adequate and is increasingly supplemented with cash-earning opportunities.

The hard physical work of the subsistence lifestyle becomes less attractive when compared to the easier money-making opportunities of the cash economy. Much

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Trading may be done by direct bartering or in exchange for local currency

of this money is spent on imports of one sort or another, with only taxation, customs and import duties flowing to government revenue (in some countries a goods and services tax exists). The countries become more and more dependent on the global economy and in the process lose some of their traditional sense of self-sufficiency.

Bureaucracy, aid, social services and remittances play the dominant economic roles in many Pacific island economies. In Tuvalu, for example, government services accounted for 45 per cent of the total economic output over the 1981–85 period. Over the same period the government service sector grew by 25 per cent, a rate slightly faster than the economy as a whole. This growth was largely financed by increased foreign aid. Throughout the Pacific, with the notable exception of Fiji, there is a high level of dependence on development assistance (or budgetary support in some cases) despite the wish to achieve economic independence and growth.

Pacific island countries are not well endowed with the technical infrastructure necessary to promote and achieve the effective transfer of new technology. Even in established technologies, many countries lack the necessary capabilities to provide ongoing maintenance and repair. In many cases the major requirement for technology is in management and technical expertise relevant to the ecologically sustainable development of natural resources.

Environmental & development decision-making

Long-term environmental concerns are rarely given the consideration vital to the sustainable development planning process. For example, Environmental Impact Assessment (EIA) procedures are still considered in some administrations as unnecessary, grudgingly initiated when sufficient pressure is applied. EIA, unlike economic, financial and legal assessments, has yet to be used routinely to appraise cabinet submissions or project proposals. While all governments of the region express strong commitment to environmentally sound development, these concerns are not always mirrored in the institutional frameworks, staffing levels and funding allocations for environmental planning and administration. Pacific governments are constrained by the lack of financial resources generally, and this is compounded by budgetary allocations to environmental administration being commonly a very small fraction of the total appropriation.

A major constraint is that few Pacific governments currently have within their ranks of decision-makers the necessary trained staff to assess or monitor EIA , or cope with the magnitude of the environmental management tasks confronting each nation. Most Pacific countries now have small environment and conservation agencies but they generally have few staff, often with limited training and experience. For the small island states, the training and retaining of environmental specialists is a particular concern.

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Improving public awareness is an important part of improving environment and development decision-making

In some cases, this situation may result from an imperfect appreciation by decision-makers of the physical, psychological, social, and environmental costs to the community of some forms of development. To some extent, this reflects a general lack of public awareness of the principles of ecologically sustainable development and hence emphasises the need for greater effort to raise public awareness of the environment.

Unfortunately, detailed information on ecosystems and national resources is rarely available to decision-makers. Some countries such as Western Samoa, Fiji, Vanuatu and Solomon Islands fare better than others in this regard, but current land resource information often dates from the colonial era of the 1960s.

Many Pacific countries regard the lack of specific environmental legislation as a major constraint to sustainable development. Although a considerable body of resource-based legislation does exist and generally contains specific provisions for environmental protection, in some cases such legislation is outdated or unwieldy, very difficult to administer and enforce. Consequently in most countries review of existing legislation is a high priority.

Energy

Because of the absence of proven fossil fuel reserves in Pacific island countries (except PNG), increasing dependency on imported fossil fuel is seen as a major constraint to sustainable economic development. For example, in 1989, Kiribati and Tonga imported 30 and 44 per cent respectively of their total energy needs and in Vanuatu and Fiji petroleum alone represented 8 and 14 per cent respectively of the total value of imports. Smaller island countries, such as Niue, the Marshall Islands, Tokelau and Tuvalu, often pay more for their fuel imports than they earn in total from their exports. The region's dispersed population and long distances between major population centres make efficient energy production and distribution a fundamental problem. At a local level, in densely populated areas, fuelwood supplies are becoming scarce. This is contributing to deforestation and the degradation of surrounding lands.

The increasing dependency on fossil fuels is seen as a constraint to sustainable development

The link between existing forms of energy production, current world consumption levels particularly by the developed countries, and the onset of climate change is clear to the countries of the South Pacific. When this issue is considered alongside the current regional reliance on fossil fuels, it is not unexpected that over 80 per cent of the Pacific Island Developing Countries (PIDCs) placed emphasis on the need for renewable alternatives in their National Reports to UNCED. The development of economically sustainable, renewable and moderate-scale energy production technology is however constrained by the lack of resources, skilled staff and effective technology co-operation.

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SUSTAINABLE MANAGEMENT OF LAND RESOURCES

For most South Pacific societies, land resources are the basis for the majority of subsistence and commercial production. High population growth rates and the displacement of traditional land management systems by introduced agricultural systems, mining and forest utilisation have placed serious stress on our land resources and the communities which depend on them. Such trends are particularly serious on smaller islands, especially atolls, with limited land, poor soils and few other land resources.

Land tenure

The systems of land tenure are highly variable throughout the region, but commonly based on communal land ownership patterns. In some countries formerly under colonial administration, a small proportion of land was alienated, mostly within the main urban centres and in the fertile coastlands. The proportion is small, however, with 90 per cent of land in Papua New Guinea, 83 per cent in Fiji and 80 per cent in Western Samoa being under customary tenure. The main exception is the Kingdom of Tonga in which the constitution guarantees to each Tongan male over 16 years of age land in town on which to live, and an area of land outside town for gardening; this land ownership is registered. In some island groups such as the State of Yap in FSM, and Atiu in the Cook Islands, customary tenure extends to the outermost edge of the fringing reef; in Tonga, the sea is owned by the Crown and all people have free access to its resources. These land tenure systems are intimately associated with traditional conservation practices and have major impact today on the establishment of protected areas and on environmental management generally.

Land tenure systems are intimately associated with traditional conservation practices and land management generally

Deforestation

Like the rest of the world, the Pacific region is experiencing rapid deforestation. In the high islands of PNG, Solomon Islands and Vanuatu, there are currently few spatial or temporal data on forest types and distributions which would help define the rate and extent of forest loss and assist with sustainable forest utilisation at the national level. Commercial logging, agricultural plantation establishment and expansion, swidden agriculture, cyclones, fire, landslides and massive slumps all contribute to deforestation on Pacific islands. Road construction associated with commercial logging and agricultural projects encourages squatters to move into forested areas after logging and clear forest for gardening. But it is uncontrolled or poorly managed logging of forests which has caused most concern.

Uncontrolled and poorly managed logging of forests has caused most concern

The implications of forest loss for soil conservation, watershed maintenance and habitat diversity need little elaboration. All countries recognise to some extent the value of reforestation of logged areas or of afforestation of grasslands. Yet the rate of reforestation is quite inadequate in relation to the total area being logged and subsequently deforested.

In the low islands, particularly the atolls, concern is expressed for agrodeforestation. The traditional agricultural production systems of the region are a form of agroforestry, which in some islands like Yap (FSM) and Tonga have been

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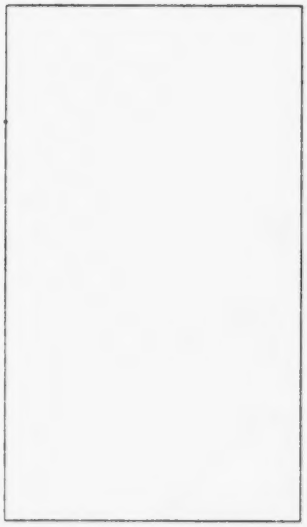
Road construction can encourage squatters to move into forested areas

developed to a very high level of sophistication. Trees are an integral part of the agricultural production system and are planted or protected within gardens and settlements, where they provide significant food, timber and medicinal resources. Scores of arboreal species are important as part of the polycultural mix of useful plants in gardens; many of the same species are planted in the villages. However, both diversity and density of tree species are being reduced in some areas due to population pressures, loss of traditional controls, and other factors, with a resultant loss of capacity for self-reliant, sustainable community systems.

Land degradation

More than 80 per cent of the region's 5.8 million people live in rural villages and obtain the bulk of their diet from subsistence production systems. In relatively recent times imported foods have been added to the local diet but their contribution varies, generally being higher in the smaller island states and, elsewhere, dependent on proximity to transport.

Throughout the region, root crops are the main source of food. They are produced by a variety of gardening practices, but most commonly the production is based on a forest fallow of about 10–20 years, or grass fallows of shorter duration. Only rarely is land kept in permanent cultivation — the notable exception is swamp taro. The staple food crops are mostly non-storable, so farming systems have to be reliable — farmers aim to produce a significant surplus which can be used for gift exchange in the old system or more recently for cash. This form of production does not appear as yet to add to land requirements. But the move to cash cropping has posed some problems.



Crop production is often forced to expand into marginal lands

Cash cropping for the export market has two modes of production: tree cropping by village small landholders and capital intensive plantations. Village cash cropping is carried out in the same land use and tenure context as subsistence production, but the land requirements for larger plantation ventures compete with that currently or potentially required for expansion for food production.

Land pressure will clearly be greatest where there is little or no room for expansion and population continues to increase rapidly. The effect of pressure in such islands is to force development of some of the land traditionally retained for other purposes or to require crop production to expand into marginal land, which is more susceptible to soil erosion or has lower natural fertility levels. Soil erosion is a problem in some areas under both agroforestry and tillage systems, but it is sometimes overestimated. Man-induced erosion needs to be distinguished from the results of natural occurrences.

In countries such as Fiji and Western Samoa, where the availability of good arable land is already constrained, the agricultural systems have already passed to the expansion phase, and subsistence gardening is moving on to increasingly marginal soil types and slopes. In other countries such as PNG and Solomon Islands, where only a small proportion of land is currently used for agriculture and

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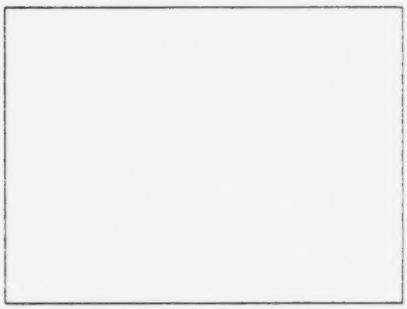
there is still room for expansion, increased production nevertheless appears to come mostly from more intensive cropping within areas already in production. Such intensification will result in land degradation under current farming systems. This represents the major long-term terrestrial environmental issue in the region.



Soil erosion is a problem in some areas under both agroforestry and tillage systems and where access roads are needed in steep terrain

Mining

Environmental degradation is inevitable from mining operations, but the extent ranges from total destruction at the mine site to impacts of varying intensity associated with the processing of the ore and disposal of wastes. Most environmental damage is localised; the major problem experienced in the region has been the disposal of tailings rich in heavy metals and of toxic chemicals used in processing. These can cause extreme impacts on rivers, coastal resources, and vegetation, far removed from the immediate mine site. Where the degradation is localised and the landowners consider they have been adequately compensated financially, such damage appears to be acceptable. This is often because of the substantial benefits it brings from royalties, infrastructure development, employment, skills training, medical and other services.

The exploitation of minerals is an important source of income but also brings inevitable environmental degradation

With the raised expectations of gold discovery on islands in the volcanic 'fire rim' of the Pacific, a marked increase in mining activity in the region is conceivable. Mining activity on small islands would have great potential for damaging the marine resources with major possible social consequences for a people so traditionally dependent on them. Mining of seabed resources of cobalt and manganese is conceivable, but at present there is no such mining in the Pacific. Throughout the Pacific there has been a flurry of exploration, both on land and of the seabed for minerals and oil. Such exploration itself requires EIA and the enforcement of environmental safeguards, but this is seldom carried out, resulting in environmental damage, particularly erosion and water quality problems.

Another form of 'mining' in the Pacific is the excavation of coral, sand and aggregate from beaches. This is a problem particular to the small islands with fringing reefs, for which the only real solution is to locate alternative sources of construction-grade sand or to turn to construction methods not requiring concrete or cement.

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Deterioration of traditional systems

Traditionally certain rules and procedures had to be followed in agriculture, hunting and fishing. Pacific peoples evolved methods of maintaining soil fertility such as shifting cultivation with bush or grass fallow, composting associated with the production of pit-grown taro on some atolls, and mound building, prohibitions were strictly enforced on the felling of certain trees or the fishing of specified reef areas. Temporary bans were imposed on hunting and fishing during breeding periods or times of scarcity. It should also be recognised that some traditional practices, including excessive use of fire, had adverse environmental effects, to which the large areas of man-induced, infertile grasslands of Fiji and Papua New Guinea bear witness.

Traditional management systems include prohibiting fishing on certain reefs and during certain periods

Traditional controls, such as in Ra'ui in the Cook Islands, were generally not applied with any specific higher conservation ethic in mind; these controls were practical management tools which had developed over many generations to ensure the supply of particular food stocks and medicines. They could take the form of a continuous prohibition (tabu, tambu, taboo) or control applied before some major community ceremony to build up food reserves, or to help a depleted resource recover after either such an event or natural calamity.

Within the past few years awareness of the importance of local knowledge and management systems has grown rapidly within international development and conservation agencies. The potential for these systems to be applied to the management of soils, forests, water resources, wildlife, reef flats, and fisheries in the South Pacific is great. The value of local knowledge management systems and the expressed interests of Islanders and island governments in having it recorded and used in natural resource management is, unfortunately, not reflected in the attention being given it by natural resource professionals and management advisers in the region. There has also been some interest in building traditional customs and management controls into modern legislation to reconcile legal precision with customary practice. This would best be undertaken by trained lawyers from within the island nations of the region if preservation of custom is the goal.

Although traditional knowledge and practices still exist in the Pacific they are being eroded at an accelerating rate

Local knowledge is eroding at an accelerating rate as a consequence of westernisation, industrialisation, urbanisation and the accompanying alienation of the young from their traditions. The educated elite whose formal education is often obtained far from their own communities frequently know little about local subjects. It is these very people who will be most responsible for influencing patterns of natural resource use in their communities in future years. Their technical and political sophistication cannot be put to best use without consideration of the traditional knowledge and practices of their elders.

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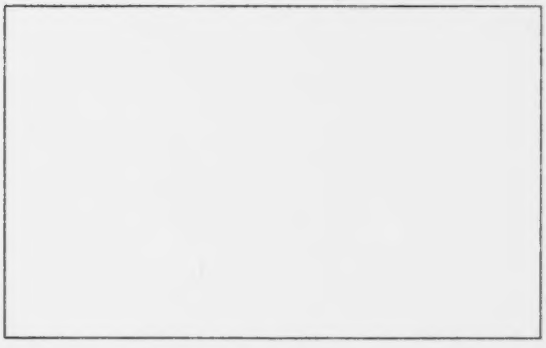
CONSERVING BIOLOGICAL DIVERSITY

Distribution & extent of biodiversity

The tropical South Pacific region is renowned for its high levels of species diversity and endemism. Species diversity and endemism appear to be highest on the larger high islands of the western Pacific (New Caledonia, Papua New Guinea, Solomon Islands and Vanuatu), declining east from the continental masses, and south and north away from the equator. Except on the atolls, high levels of endemism occur throughout the region due to the isolated evolution of island species. The region also has the most extensive coral reef systems in the world, with vast and complex marine ecosystems. The estimated extent of biological diversity, however, is not conclusive for either marine or terrestrial systems because detailed biological inventories are lacking. It has been estimated that only 10 per cent of tropical species have been described.



The region is renowned for its high levels of species diversity and endemism

Our people rely heavily on these biological resources for subsistence and for their economic, social and cultural well-being. The culture of all island societies is inextricably linked to the diversity of living species which characterise the different island environments. This close affinity with the natural environment is shown by the widespread use of many of the biological resources for artisanal and medicinal purposes.

Vulnerability of island systems

Island biological diversity and its component species are among the most critically threatened in the world. It is estimated that about 75 per cent of the mammals and birds that have become extinct in recent history were island-dwelling species, with more extinctions likely in the near future. Endemic species can be lost in the space of a few months through the destruction of critical habitat or through the introduction of predators, insect pests and diseases. The loss of any habitat on a high island is likely to mean the extinction of species of plants or animals. A colony of feral cats or mongooses on a small island is enough to eliminate most, if not all, species of native birds and reptiles.

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Species can be lost in the space of a few months through the destruction of critical habitats

Island systems are described as fragile because of their generally small size and endemicity. Because of size, a large proportion of the land, its inhabitants and the adjacent sea are likely to be affected by disturbances that might be only minor regional events on a larger land mass. A forest large enough to attract the attention of timber exporters must of necessity be a forest that would cover a large proportion of many Pacific islands.

Recognition of the significance and value of biological diversity is growing within the region and the present inadequate status of the protected area system is widely acknowledged. The implementation of policies to conserve fauna and flora in the region remains difficult because of financial and manpower constraints and also the particular constraint imposed on governments by customary land ownership, complicating negotiations for the establishment of protected areas and the financial or other compensation of the landowners.

Control of pests

The uncontrolled introduction of exotic pests has been responsible for great loss of biological diversity, although the extent is not known. The effect of the introduction of animal pests, particularly mongooses, cats, rats and cane toads on native fauna is only now becoming clear. In Solomon Islands, recent fauna surveys failed to find expected native ground fauna species high on Guadalcanal's highest mountain, at the same time noting the presence of a population of feral cats. In addition, damage to the ecosystem from 'domestic' animals, including goats, dogs, and even sheep, has been severe on some islands. Some introduced weed and grass species have become very aggressive in their new homes, swamping natural vegetation.

Invasion of fast growing weeds, such as these raspberries, crowds out native plants and prevents growth in the understorey

While some suggest that the damage has already been done and the only recourse now is to learn to live with the problems these introductions have caused, there remains the need for an effective agricultural quarantine system to protect our countries from further unwanted introductions and to contain the spread of pests and diseases. Existing quarantine units in the Pacific are grossly understaffed for the size and importance of the task before them.

SUSTAINABLE COASTAL & LIVING MARINE RESOURCE DEVELOPMENT

The small size and narrow natural resource base of many Pacific islands make them particularly vulnerable to inappropriate development and to mismanagement. For some, the ocean is a major part of that resource base, with very high ratios of sea to land (Kiribati has a ratio of over 4000:1). Other than the interior of the larger Melanesian islands, the Pacific islands are entirely coastal in nature.

Coastal preservation

The coastal zone supports a variety of human activities, often of a subsistence or traditional nature. The reefs and lagoons are the prime source of subsistence protein for a large proportion of the Pacific. Their high yield potential is reduced in the Pacific by a wide range of activities, some originating at considerable distance from the coastline:

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Other than the interior of the larger Melanesian islands, the Pacific islands are entirely coastal in nature

Land reclamation, dredging and construction are part of the pollution problem for coastal areas

- overfishing and the use of poisons and explosives when fishing
- pollution from sewage, fertilisers and biocides, toxic wastes and oil spillage
- landfill and coastal 'reclamation' for building sites
- mangrove damage through their use as garbage dumps, by harvesting for poles and firewood and through improper design of causeways, bund walls, seawalls
- sedimentation resulting from agriculture, mining, forest utilisation, beach mining, lagoon dredging and construction
- seepage of contaminated groundwater
- souvenirring of corals and shells by tourists or their sale to tourists; tramping across reefs.

Water quality monitoring and trace-back systems are of particular importance in protecting the vulnerable intertidal zone and reefs near urban or industrial areas. However, in general, existing laboratory capability cannot provide the level of monitoring required if analyses are to be in accordance with international standards for water testing. Existing analytical facilities and monitoring efforts are fragmented among a number of sectoral agencies rather than being co-ordinated.

Natural disasters

In addition to these human-induced impacts on coastal areas and marine resources, the Pacific is also often exposed to extremely damaging natural disasters. The events of most concern are cyclones, volcanic eruptions and earthquakes. Not all islands experience cyclones, and their occurrence in Kiribati, Tuvalu and PNG is rare. Since 1846, Tokelau has had three recorded storms, then experienced two cyclones (*Tusi* and *Ofa*) in the last five years. *Ofa* was so severe that waves completely covered the islets of the atolls, washing away topsoil, residual salt prevented crop growth for some months, and salt contaminated the freshwater lens making it too brackish for drinking purposes. In Western Samoa the devastation of *Ofa* in 1989 has been compounded by *Val* which struck only 27 months later.

Natural disasters also take their toll on coastal environments throughout the region

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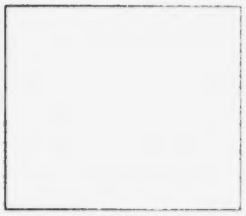
The Republic of Vanuatu would seem to be the most cyclone-prone of the Pacific island nations with 29 cyclones between 1970 and 1985, followed by cyclones *Eric* and *Nigel* in January 1985, and then the devastating cyclone *Uma* in February 1987. A recent study concluded that in any 20-year period since 1940, any given location in Vanuatu would be affected by around 10 cyclones.

Marine diversity

The Western Pacific has the highest marine diversity in the world with up to 3000 different species found on a single reef. The many thousands of islands are surrounded by a rich complex of coastal ecosystems including mangroves, seagrass beds and estuarine lagoons. For a region of such biological diversity there are few marine parks to protect this asset and they are often small in size. Indeed, coastal zone management programmes and plans which integrate sustainable resource use and conservation are virtually unknown in the Pacific.

The use of driftnets by distant water fishing nations has been strongly opposed by the region

The EEZ of each country comprises a very large proportion of its total area and for nations such as the Marshall Islands, Kiribati and Tuvalu, offshore marine resources represent almost the sole opportunity for substantial economic development. Highly migratory tuna are the principal fisheries resource and their exploitation is a high-technology operation, primarily by US or Asian-based fishing fleets. Unfortunately certain fishing techniques and practices, such as the use of long driftnets, have threatened the sustainability of this resource. While the ability of countries to control or utilise fully their EEZs is improving, resource knowledge remains inadequate.



The sustainability of inshore fisheries is essential to the subsistence lifestyles of the Pacific

Inshore fisheries are also threatened by overfishing, habitat destruction and the pollution of lagoon waters. These fisheries are essential for the subsistence of Pacific island communities and therefore are of paramount importance to coastal zone management.

Oil spills

The South Pacific region is not traversed by major world oil transportation routes and there have thus been few problems with petroleum wastes, except discharge of oil by vessels in localised harbour areas. These discharges usually arise from leaking connections when discharging petroleum products into shore storages, but some illegal discharge of oil-contaminated bilge water is also reported. However the risk of a major oil spill is always present from tankers delivering oil supplies in the region and a concerted effort is being made to improve the region's capacity to handle such an emergency.

SUSTAINABLE MANAGEMENT OF FRESHWATER RESOURCES

Water quality in the high islands, such as Solomon Islands, is usually acceptable with specific problems occurring in villages in flooded riverine and estuarine environments where water may be of poor quality but still potable. On low atolls however, dissolved wastes are not filtered out by the soil because of the low clay

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The management of fresh water is critical to the sustainable development of small island states

content. The low elevation and shallow water table mean that pollution rapidly reaches the groundwater. In some atoll communities where drought may force use of polluted groundwater for drinking and cooking, health problems such as diarrhoea and hepatitis are prevalent, with occasional outbreaks of typhoid, and, in Kiribati, Tuvalu and the Marshall Islands, even rare occurrences of cholera.

People living in limestone areas may also suffer health problems due to a tendency to iodine deficiency leading to goitre. Earlier public health programmes in the Pacific that provided iodine injections and the use of iodised salt have faltered and this environmental health problem has reappeared.

Localised problems with pesticides and herbicides are reported, and are attributed primarily to the incautious disposal of excess biocides close to streams or directly into the water. The use of other chemicals, such as fertilizers, is limited and has not been considered a major problem to date, but the growing tendency towards intensive horticultural production will increase the potential for pollution from this source.

Small coral islands less than 400 metres across have no fresh groundwater. On larger coralline islands, groundwater is drawn from the freshwater lens floating on top of the salt water. The shape and size of the lens is governed by rainfall volume and periodicity, tides, seepage, hydraulic conductivity and rate of abstraction. The main groundwater concern is the contamination of drinking water supplies from salt water intrusion, agricultural chemicals or other noxious or hazardous wastes, and, particularly with groundwater on the atolls, by human and animal faeces. The problem is to institute monitoring programmes, and this concern is not confined to water alone. There is generally a very limited capacity to monitor chemical residues, drugs and hormones in food to protect consumers; the capacity to carry out toxicity and persistency tests of agricultural chemicals in soils and plants in order to safeguard the public from their indiscriminate use is also limited.

WASTES, TOXIC & HAZARDOUS SUBSTANCES

The physiographic characteristics of some Pacific islands, their isolation and oceanic location, and their dependence on a marine and limited terrestrial resource base make them highly vulnerable to contamination by toxic and hazardous wastes and chemicals, and radioactive materials.

Most PIDCs have serious disposal problems associated with solid and liquid wastes

All countries of the South Pacific share the problem of safely disposing of solid and liquid wastes, particularly as a result of urbanisation. Point source pollution from industrial wastes and sewage, inappropriately sited and poorly managed garbage dumps, and disposal of toxic chemicals are significant contributors to marine pollution and coastal degradation. There is also growing concern that toxic and hazardous waste disposal is being brought to the region from developed countries.

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Much solid waste is generated because of rapid urbanisation, an equally rapid rise in 'standard of living' expectations and the related demand for imported canned, plastic-wrapped or bottled goods. With limited land areas around many urban centres, and with local reefs, lagoons or inshore fisheries particularly vulnerable to pollution, most of our Pacific Island Developing Countries have serious disposal problems, few disposal sites being acceptable socially, economically, or from the viewpoint of human health.

In the larger towns, the search for environmentally safe and socially acceptable sites for garbage dumps has become a perennial problem and, for several towns, seemingly insoluble. In smaller settlements and coastal peri-urban situations, mangrove areas or beaches have become casual dumping grounds for all waste, ranging from derelict cars to household refuse. Expected further urbanisation and industrialisation will make these problems even worse.

With inadequate sanitation systems for the disposal or treatment of liquid wastes, high coliform contamination in surface waters and in groundwater near urban areas is common. Various incidents have also been reported of pollution by toxins from industrial waste, effluent from abattoirs or food processing plants, by biocides, and polluted effluent from sawmills and timber processing areas.

These issues and constraints must be addressed if we are to achieve sustainable development. In recent years we have tried to address our concerns at both national and regional levels. Chapter 3 presents the priorities for action required if we are to make any real progress towards sustainable development.

chapter 3

PRIORITIES FOR FURTHER ACTION

Let us all bind ourselves together and pragmatically work together as responsible citizens — brothers and sisters — of the world. We will surely bring about peace and prosperity to all if we join together in addressing the problem.

Rt. Hon. Bikenibeu Paeniu
Prime Minister of Tuvalu

The issues and constraints discussed in Chapter 2 lead directly to the following priorities for further action. These priorities for Pacific Island Developing Countries (PIDCs) have been affirmed by consensus through SPREP and the South Pacific Forum. They are presented in this chapter under the major topics which Agenda 21 is expected to address.

The ***Basis for action*** summarises the issues and constraints of Chapter 2 and presents a number of major responses to these concerns that have been taken individually or collectively by PIDCs. The ***Objectives*** and the ***Activities*** for sustainable development which are listed here have been drawn from the *SPREP Ministerial Declaration on Environment and Development* , the *Regional Statement to the Third UNCED Preparatory Committee*, the *1991–1995 SPREP Action Plan* and the *Forum Communiqué, Twenty-second South Pacific Forum*. They therefore represent the consensus views of the 14 participating island developing countries of this region. Each objective and activity is normally stated only once under the topic of greatest relevance, however, this does not restrict their application to other topics of Agenda 21.

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Before presenting the priorities for further action, several issues that are relevant to many topics and have major implications for the implementation of sustainable development in our region need highlighting. These include:

- the critical need for national and regional capacity building across all sectors, as a platform for the realisation of sustainable development in the South Pacific
- the need to inform and involve people at the grassroots level, particularly local NGOs and villagers, in decisions affecting the allocation and management of local resources
- the impact of demographic pressures on the capacity of national governments and regional organisations to plan responses to key problems
- the importance of recognising and respecting the key role of traditional practices, cultures and the subsistence economy in many Pacific island countries
- the difficulties of distance, isolation, dispersion and national budget constraints in designing and implementing environmentally sound and sustainable development programmes in the region.

THE EARTH CHARTER

Principles to guide sustainable development in the region are contained in the *SPREP Ministerial Declaration on Environment and Development*, Noumea, New Caledonia, 1991. These were further endorsed by leaders in the region at the South Pacific Forum, Pohnpei, Federated States of Micronesia, 1991. It is essential that the Earth Charter contain principles which this region has declared to be important if we are to achieve sustainable development in the South Pacific.

The region has found that the 1972 Stockholm Declaration on the Human Environment and 1982 Rarotonga Declaration on the Human Environment contain important principles that need to be reaffirmed. In particular, we are anxious that 'international protection and improvement of the environment should be handled in a co-operative spirit by all countries, big or small, on an equal footing'.

Other principles declared by the region to be important include:

- to meet the needs of present generations without compromising the ability of future generations to meet their own needs
- to promote equity in participation in sustainable development
- to minimise the adverse environmental impacts of economic development through integrating environmental considerations with economic and sectoral planning and policies
- to formulate resource use and development planning policies which take into account the precautionary principle.

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SOCIAL & ECONOMIC DIMENSIONS

Combating poverty & meeting basic needs

Objective

To assist countries in protecting and improving their shared environment and in managing resources to enhance their quality of life for present and future generations

Basis for action

The emergence of poverty is a new challenge for a number of PIDCs. Urbanisation and its accompanying shift from subsistence toward a monetary economy have brought pockets of poverty and highlighted the need for remedial programmes. It has also recently become apparent that viable subsistence lifestyles are being threatened by poverty through the over-exploitation and depletion of natural resources. This link between poverty and the environment is just beginning to be addressed in the region and is of course compounded in many small island states by rapid population growth. Long-term solutions to this problem will clearly need to address demographic issues and strike a balance between traditional lifestyles and rapid economic change.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- ensure that the international community, in particular developed countries and transnational corporations, recognise two cultures — a commercial-style economy and a traditional society — existing side by side throughout the Pacific
- address the links between poverty and environmental degradation which also address the impact of unsustainable economic activities on traditional subsistence cultures.

Reducing demographic pressures

Objective

To adopt population policies which foster sustainable development

Basis for action

Rapid population growth and rural-urban migration are an underlying cause of land degradation, waste disposal problems, the contamination of fresh water and related human health problems in our region. Although these effects are generally localised, they present a severe threat to sustainable development for some of our countries.

With a high net population growth rate for the region it is very difficult to plan and implement sustainable development at both national and regional levels. As a result the PIDCs are committed to reducing demographic pressures. The Marshall Islands, for example, aims to reduce its natural annual growth rate over the next five years from 4.2 to 3.6 per cent. In many countries conventional methods of birth control are generally not an option due to existing cultural values.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- provide continued guidance and programmes in the area of population planning
- provide information about and access to international population programmes to any Pacific countries which are suffering the adverse effects of population pressure
- draw the attention of all organisations and communities to the relationship between population impacts, environmental problems, and the ability of countries to achieve ecologically sustainable development.

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International & domestic policies to accelerate sustainable growth

Objective

To ensure that economic development activities are carried out in an environmentally sound and sustainable manner

Basis for action

It is widely recognised that long-term economic growth can only be achieved and maintained by following the principles of sustainable development. Current economic activity in the region focuses on the expansion of tourism, agriculture, forestry, fisheries and extractive industries, although there is concern at the continuing difficult economic situation facing many of our governments. Both public and private sectors are having to cope with the high costs of transport, communication and servicing combined with the lack of infrastructure in the region. Given the vulnerability and particular requirements of small island states of the region, the delivery of substantial aid flows remains of critical importance.

While many issues relating to the acceleration of sustainable economic growth, such as programmes of structural adjustment, need action at the national level, there is also a key role for regional action. In PIDCs there is a commitment to working closely together and to the co-ordination of our development activities to the greatest possible extent. This includes avoiding duplication of activities among regional programmes and organisations and developing joint statements of priority needs for the region. We have proposed that these needs be met through collaborative regional assistance programmes that complement our national activities.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- give greater emphasis to programmes and policies involving the private sector, including trade and investment
- assist with the development of national policies, strategies and plans for sustainable development and strengthen national capabilities to implement such policies and programmes
- promote adherence to and further development of codes of conduct for transnational corporations operating in the Pacific region
- recognise the special development requirements of the smaller island countries and ensure that the international donor community take these into account in the provision of assistance.

Protection of human health conditions

Objective

To integrate health and nutrition considerations into development planning

Basis for action

The economic decisions made on the path to sustainable development are critical to the health of our people. The health of our people has often been put at risk by the lack of information and capacity to maintain basic sanitary conditions. This is compounded by rapid population growth in some areas. The deterioration of traditional food systems has also contributed to our health concerns by increasing nutritional disorders and diseases. These all point to the need for development planning to be responsive to the health and nutritional needs of island communities.

Particular environmental health issues relate to the supply and quality of fresh water which is essential to the survival of many Pacific island countries. Our problems of environmental health are also linked strongly to pollution from industrial wastes, sewage, inappropriately sited and poorly managed dumps, and the unsafe disposal of toxic chemicals. These wastes threaten the health of Pacific Islanders and originate from outside as well as inside the region. As part of our basis for action we recognise that the proponents of potentially hazardous activities must eliminate any negative effects on the people of the region and accept liability for any unforeseen damage which eventually occurs.

Integration of environment & development in decision-making

Objective

To integrate environmental considerations with economic and sectoral planning

Activities

To implement sustainable development in PIDCs it will be necessary to:

- develop and implement strategies to maintain and improve the quality of freshwater resources including the sanitary disposal of wastes
- prevent, control and manage pollution and wastes in ways that avoid, minimise or mitigate adverse impacts on human health
- recognise the fundamental importance of obtaining advice and consent from Pacific governments in any future actions which might impact upon the health and well-being of Pacific island people
- provide sufficient information to enable the people and governments of the region to make informed decisions regarding the use and control of substances introduced into the region which are potentially damaging to human health
- support development which fosters the maintenance and growth of our traditional food production systems and minimises the promotion and importation of nutritionally inferior foods.

Basis for action

The lack of human, technical and financial resources is a fundamental constraint to the integration of environment and development in decision-making in most PIDCs. This is reflected in the lack of data on the ecosystems and the resource base. Without such information, the use of tools for integrating environmental considerations into development planning such as Environmental Impact Assessment (EIA) is often hampered. This can also be compounded by inappropriate institutional and financial arrangements and resistance to the use of EIA in some government administrations.

Economic development activities in our region that have caused significant environmental effects have highlighted the urgent need for decision-making practices to address environmental and economic concerns in a systematic and integrated way. The preparation of National Environmental Management Strategies (NEMS) and EIA training programmes is an important step in response to this need for most Pacific island governments. The scope of the NEMS is broad and includes issues of legislation, EIA, monitoring, capacity building and the essential administrative infrastructure for effective decision-making and enforcement.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- encourage research which meets the needs of decision-makers and planners and assists them in achieving priority goals, both national and regional, with respect to development policy and environmental management
- improve the quality and flow of information on which environmental management decisions and policies are based
- assess the environmental, social and economic impacts of development projects and resource use practices through means such as Environmental Impact Assessments
- encourage institutional, management and financial arrangements which support the establishment, ongoing protection and proper management of conservation areas
- develop public information programmes that emphasise the link between environment and development issues and aim to reinforce positive community attitudes towards the environment as well as informed decision-making on issues of both conservation and development.

CONSERVATION & MANAGEMENT OF RESOURCES FOR DEVELOPMENT

Protecting the atmosphere

Objective

To adopt measures which will enable island countries to cope effectively, creatively and sustainably with climate change and rising sea level

Basis for action

Our leaders have declared that the most serious environmental threats to our developing island countries relate to the protection of the atmosphere — global warming and sea level rise. The emission of greenhouse gases threatens the cultural, economic and physical survival of Pacific islands. The industrial countries bear primary responsibility for reducing these emissions. As PIDCs we cannot be expected to bear a disproportionate share of the costs associated with global climate change. It is therefore urgent to secure international action through the timely conclusion of a strong and substantive global convention with commitments to control the adverse effects of climate change. The link between existing forms of energy production, consumption patterns and climatic change is an integral part of any international basis for action. As has been acknowledged by the Intergovernmental Negotiating Committee on a Framework Convention on Climate Change, the special interests and needs of our small island states need to be accommodated

The South Pacific region has pledged to contribute to international efforts to limit the adverse effects of climate change by controlling our own emissions of greenhouse gases and managing our national resources on a sustainable basis. Acknowledging the uncertainties surrounding this issue and to help us understand and respond to climate change, the region is involved in programmes to monitor sea level and national studies to determine potential impacts. This will also help us implement development strategies which take into account climate change

Activities

To implement sustainable development in PIDCs it will be necessary to:

- immediately make significant reductions in emissions of industrially generated greenhouse gases, in particular carbon dioxide
- support understanding of the global climate system
- provide international funding and technical assistance for the implementation of measures that will enable us to cope effectively with changes in climate patterns and sea level
- monitor climate change and sea level rise and participate in international discussions of these issues
- improve understanding at political and public levels of the potential impacts of climatic changes on the Pacific island region
- provide assistance in designing rational response strategies to address environmental, social and economic impacts
- co-ordinate the assistance of international organisations, governments and institutions from within and outside the region dealing with climate change in the South Pacific

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Planning & management of land resources

Objective

To manage and plan for the multiple-use, ecologically sustainable development and conservation of land, habitats and resources

Basis for action

Less than two per cent of our region is land and so the careful planning and management of its use is essential. For our communities, these scarce land resources and the closely linked coastal systems support a wide variety of both subsistence lifestyles and commercial production. Many activities discussed under other headings of this report are either profoundly dependent on or directly influence the proper planning and management of land resources. The particular problems for the sustainable management of land resources in PIDCs include rapid population growth, deforestation, land degradation and mining. The resolution of these problems must deal with communal land tenure systems, traditional land use practices and cultural values and the integration of environment and development decision-making. In the region the Apia Convention provides a legal basis for the protection of nature.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- recognise the integral relationship between land, freshwater and marine resources in the Pacific region
- take into account the impacts of land development and resource extraction projects on other resource users and environments
- recognise and respect the rights of traditional landowners and users
- ensure the proper management of mining so as to minimise the environmental impacts and maximise the local social and economic benefits
- recognise the need for development projects, including tourism and industry, to be undertaken in a manner considering proper environmental controls

Promoting sustainable agriculture & rural development

Objective

To ensure the retention of traditional knowledge and practices which foster sustainable development

Basis for action

Traditional resource management practices in rural areas of the Pacific region are relatively sustainable, having proven themselves over several centuries. Generally, they are based on renewable inputs, maintain biological diversity, are non-polluting and require no imported energy inputs. More than 80 per cent of the population of the region live in rural villages and rely on these traditional practices and subsistence production systems for most of their dietary requirements. Traditional gardening systems, along with hunting and gathering, provide reasonable food security. Where traditional land management systems have been replaced by introduced agriculture, for example plantation monoculture, serious stress on land resources and local communities often results.

There has also been a loss of traditional knowledge which has implications for sustainable rural development. The importance of local knowledge and management systems to the sustainable use of island resources has been strongly stated by PIDCs and research which focuses on indigenous knowledge and natural resource management practices is received with growing enthusiasm in the Pacific.

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Combating deforestation

Objective

To promote sustainable forestry practices even where this requires that existing programmes be changed to ensure that they are environmentally sound

Activities

To implement sustainable development in PIDCs it will be necessary to:

- recognise the critical contribution of subsistence agriculture to the real incomes and quality of life of many South Pacific communities, and its role in providing a basis for self-reliance
- develop and promote sustainable gardening, fishing and forestry practices
- adapt and adopt local knowledge management systems for the management of soils, forests, water resources, wildlife, reef flats, and fisheries
- encourage the integration of traditional sustainable resource use and conservation practices into environmental management activities and programmes
- recognise and respect the rights of traditional landowners and users.

Basis for action

There are many human activities and natural phenomena which are contributing to deforestation in our region but the activity of most concern is uncontrolled or poorly managed logging of forests. The region's tropical rainforests are among the ecosystems under particular threat.

Although it is known that the Pacific is facing rapid deforestation, data to define the actual rate and extent of forest loss at the national level are limited. Forest resource surveys are now under way in Solomon Islands and Vanuatu, and earlier surveys in PNG are to be updated. These resource assessments will be combined with the development of information systems to improve the capability for land use planning. The broad strategies of some Pacific countries aim to reduce both the external and internal pressures for unsustainable forest utilisation and for deforestation. These include the promotion of industrial plantations to supply future raw wood needs and of forest reserves and national forest parks.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- assist the region to develop practices which help to maintain the region's forest resources and biological diversity
- recognise the value and role of forests as carbon sinks and in ameliorating the impacts of climate change
- promote the conservation and sustainable utilisation of tropical forests
- identify forested areas of particular biological diversity significance and assess those resources.

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Protection of the quality & supply of freshwater resources

Objective

To ensure the sustainable use and conservation of fresh water

Basis for action

Fresh water is essential to human existence and a major requirement in agricultural and other production systems. Many Pacific islands, in particular low-lying atolls, have no significant supply of surface water and extremely limited and fragile groundwater resources. Because of rapid population growth, the conservation and management of groundwater and the collection and storage of rainwater become critical to sustaining human settlements in these areas. Even on the larger and generally higher islands our freshwater supplies are vulnerable to pollution and overuse, particularly in areas of heavy population density, with known impacts on human health.

In planning for the future we must recognise the constraints placed on development by the limited and uncertain supply of fresh water and the vulnerability of groundwater to contamination both from salt water intrusion, especially as sea level rises, and from sewage and other pollutants. Unfortunately there is limited capacity to monitor water reserves or quality. In most instances, a regular monitoring programme will require strengthening of the analytical capability and capacity of national laboratories. The only alternative is to send samples regularly to overseas laboratories. This is unsatisfactory because of transport limitations, time and cost.

Effort is also required to design more efficient catchment and reticulation systems. Historically, storage of water supplies in rainwater catchments, tanks and cisterns has provided drinking water for many areas of the Pacific, including large areas of rural Australia. This is practical both for water supply in drought-prone islands such as Kiribati, Tuvalu and Tonga, and for water quality where groundwater has been polluted.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- recognise the constraints placed on development by limited freshwater resources and the vulnerability of such resources to contamination
- develop and acquire appropriate technologies for the conservation and reticulation of fresh water
- take account of South Pacific concerns in the design and administration of international water programmes
- develop and expand rainwater catchment systems, particularly on the outer islands, but also in urbanised areas to reduce the pressure on limited groundwater resources and the need for costly water treatment.

The Pacific Way

Conserving biological diversity & managing wildlife

Objective

To protect biological diversity and promote ecologically sustainable use of the region's biological resources

Basis for action

As one of the world's centres of biological diversity, maintaining the region's biological diversity in both marine and terrestrial environments is critical to sustainable development. Species and ecosystems in the region are highly vulnerable to habitat destruction and pest infestation. Although limited, enough information already exists to facilitate the selection of priority sites to be protected; emphasis must now shift to practical arrangements for implementation of conservation programmes in the customary land context. Given the special characteristics of land tenure and resource ownership in PIDCs, which in many cases extend to coastal and inshore areas, we find that the successful protection and management of natural areas depend on the full participation and active support of the local communities. Highest priority for the establishment of protected areas should logically be given to those sites harbouring the greatest diversity and endemism, and which face the greatest threat.

We have committed ourselves to the strengthening of national and regional capabilities to conserve biological resources through the development of an *Action Strategy for Nature Conservation in the South Pacific* and of an umbrella biological diversity programme for carrying it out. Completing ratification of, and implementing, the Apia and SPREP Conventions, and continuing regional programmes for the conservation of marine turtles, avifauna and marine mammals are further evidence of this commitment.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- promote recognition of the fundamental importance of biological resources to the peoples of the Pacific region
- conclude a comprehensive biological diversity convention which takes into account the unique characteristics and needs of this area
- provide funding and technical assistance to meet provisions under existing agreements (e.g. Convention on International Trade in Endangered Species)
- assist in identifying and assessing national and regional biological resources and in establishing resource databases
- recognise that the maintenance of biological diversity is important not only in undisturbed terrestrial and marine ecosystems but also in agricultural and urban areas
- support the development of agricultural, forestry and fishing practices that encourage the maintenance of the region's biological diversity
- strengthen national capabilities to ensure conservation of biological diversity
- develop specific regional strategies, as well as national management plans for endangered, threatened or vulnerable habitats, ecosystems and species
- develop a strong regional capability for the co-ordination of information exchange, training and technical assistance in support of national efforts to establish and manage conservation areas and for species conservation
- co-ordinate the assistance of international organisations, corporations, governments and institutions to assist the conservation of the region's biological resources
- promote the identification and use at all levels of traditional knowledge and techniques for resource management which assist the conservation of biological resources and diversity.

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Protection of the oceans, seas & coastal areas

Objective

To manage and plan for the multiple-use, ecologically sustainable development and conservation of coastal areas, habitats and resources

Basis for action

As the focus of most economic development in the region, the protection of the oceans, seas and coastal areas is fundamental to sustainable development in the Pacific, in particular to the long-term viability of subsistence fisheries. Covering more that 30 million square kilometres, or approximately six per cent, of the Earth's surface, the combined Exclusive Economic Zones (EEZs) of countries in the region account for 98 per cent of our territory. Sustainable development of coastal and marine resources is threatened by pollution, particularly from solid and liquid waste, and other land-based sources such as deforestation, agriculture and mining. These same areas now face the threat of sea level rise due to global warming.

The principles of coastal management which recognise these threats and the need to integrate the planning, management and use of land, fresh water and the sea are therefore important to the sustainable development of Pacific islands. Unfortunately, very few coastal management programmes have been developed in PIDCs. The transboundary nature of much marine pollution also requires a co-ordinated and comprehensive approach to both assessment and control. The marine pollution monitoring and research and training projects co-ordinated by SPREP are underway and the SPREP Convention provides a good legal framework with which to protect further the region's marine resources.

The sustainable management of high seas and subsistence fisheries is also essential to the protection of our primary resource base. The level of required technology, administrative and negotiating skills for successful operation of pelagic fisheries is very high indeed and the lack of capacity and information are problems that need to be addressed to ensure these fisheries are sustainable. The South Pacific Commission and the Forum Fisheries Agency, in particular, have been very active in helping to raise the commercial fishing capacity and the capability of South Pacific countries to return more benefits to the region. The vital importance of the pelagic fishery for future economic performance has been threatened by the use of very long driftnets. The Tarawa Declaration and Wellington Convention were produced as a result of these regional concerns and have wide regional support.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- strengthen national capabilities to formulate and implement coastal management and planning programmes through training, workshops and participation in project activities
- develop and implement coastal management and planning programmes, including appropriate institutional mechanisms, administrative arrangements and legislation as required
- improve the understanding within the community, private and government sectors of coastal environments and resources, coastal conservation and development, as well as the process and benefits of coastal management planning
- develop expertise within countries and provide examples of the process and benefits of coastal management planning
- undertake coastal management and planning activities, including coastal resource surveys and management plan development
- prevent, minimise and control land-based and other sources of marine pollution
- develop and maintain national and regional pollution emergency response and planning capabilities
- plan and implement management practices based on ecosystems rather than single species approaches
- cease unsustainable fishing practices, in particular a complete cessation of driftnet fishing in the South Pacific and the imposition of moratoria, in all regions in the world, on all large-scale driftnet fishing on the high seas
- prohibit the dumping of toxic, hazardous and nuclear substances
- endorse and implement existing conventions covering marine pollution, international shipping, and fisheries management
- recognise the environmental and social impacts on coastal communities of industrial-scale fisheries and destructive fishing practices
- appreciate the role of the ocean as a carbon sink.

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Management of toxic chemicals & hazardous & solid wastes

Objective

To prevent, reduce and control pollution which might result from nuclear testing and from importing, transporting, storing and disposal of toxic and hazardous wastes and weapons and implement the relevant international conventions

Basis for action

Pacific islands and their surrounding marine systems are extremely vulnerable to pollution from toxic chemicals and hazardous and solid wastes. Activities such as the movement and storage of these substances are of particular concern. These activities, combined with a growing volume of wastes, particularly solid and liquid wastes, associated with current forms of economic development and increasing population, threaten the health and welfare of island peoples and the natural resources they depend upon for subsistence and economic development.

Our region is not a producer of hazardous or toxic substances, and there is strong resentment of the attitude of some foreign nations which seem to regard the Pacific as a convenient dumping ground. The region is neither a dumping ground nor a testing ground for toxic and hazardous substances or weaponry, nor for outmoded technologies which generate such substances.

The fact that most of these activities occur in the coastal zone means that their impact on marine systems and coastal lifestyles needs to be considered. A certain level of education and awareness is also required concerning the use and disposal of toxic and hazardous substances, in particular attention to strengthening agricultural extension efforts for training farmers in the safe storage, use and disposal of biocides.

For the region the SPREP Convention provides a useful legal basis for the control of toxic and hazardous wastes. At an international level, the London Dumping Convention (LDC) has taken a progressive and commendable stance on ocean dumping — in particular, the 1990 decision to phase out industrial waste dumping at sea. There is merit in codifying these advances by amendment of the LDC, hopefully at its Fifteenth Consultative Meeting, coincident with UNCED.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- draft and implement appropriate legislative and regulatory measures for the prevention, control and monitoring of pollution from all sources and for the safe and efficient management of toxic, hazardous and solid wastes, including sewage and industrial effluent
- ratify and assist implemention of the SPREP Convention and related protocols
- minimise the amount of waste produced as a consequence of increased economic activities in the region and maximise the recycling of wastes
- co-operate in efforts to generate and disseminate information on the sources, levels, amounts, kinds, trends and effects of pollution and waste within the Pacific region
- strengthen the capabilities of national and regional institutions to carry out pollution monitoring and research, and to formulate and apply pollution control and abatement measures
- co-operate in the implementation of the prior consent procedure for the export of toxic substances to the region (as provided for in the London Guidelines)
- provide technical, legal, administrative and financial resources for the adoption of clean production technologies as well as for the prevention of pollution and proper management of wastes
- address the consequences of past activities which have generated the

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Safe & environmentally sound management of radioactive wastes

Objective

To prevent, reduce and control pollution which might result from nuclear testing and from importing, transporting, storing and disposal of toxic and hazardous wastes and weapons and implement the relevant international conventions

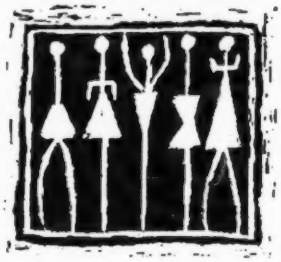
Basis for action

There is a history of atmospheric and underground nuclear tests in the Pacific region. These tests have been, and continue to be, opposed by PIDCs which are members of the South Pacific Forum. At their latest meeting in July 1991 leaders of the Forum countries reaffirmed their long-standing concern about the effects of these tests on the health of Pacific peoples and on prospects for regional social and economic development. The need to prevent, reduce and control pollution which might result from nuclear testing has been recognised, however, there are few data which can be used for decision-making in this area. The Forum has therefore suggested that SPREP play a central role in monitoring and evaluating the environmental impact of nuclear testing in the region.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- prohibit the dumping of nuclear substances
- cease nuclear testing
- address the consequences of past activities which have generated the toxic and hazardous waste products that have proved to be so damaging to the health and livelihood of our people.



STRENGTHENING THE ROLE OF MAJOR GROUPS

Women & youth

Objective

To facilitate access to environmental information for all groups, in particular women and youth, in order to enhance the management of resources and the environment

Basis for action

Both women and youth play vital roles in the management and use of the region's resources. Access to information is essential if they are to wisely use resources and be an integral part of sustainable development in the region.

The importance placed on environmental issues by women in the region was recently reflected in the resolutions of the Fifth Regional Conference of Pacific Women, Guam, 2–5 December 1991. It was also recommended that climate change, nuclear issues, driftnet fishing, waste disposal, mining and logging be priority areas for government and NGO activities.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- support education and awareness programmes for women and youth
- support the proposal for convening a Pacific Summit for Children
- ensure the overall awareness and understanding of our cultural heritage among our young people and all Pacific island residents and visitors
- promote community awareness raising activities on environmental issues with a special focus on women and youth in the region.

Indigenous people

Objective

To encourage the participation of local indigenous communities in the planning and management of programmes for sustainable resource conservation and use

Basis for action

Customary practices, such as traditional gardening systems, continue to make a critical contribution to the real incomes, self-reliance and quality of life in many Pacific island communities and it is important to preserve and enhance these systems. The rights of traditional landowners and users is also fundamental to the implementation of development programmes in PIDCs.

Developments which are compatible with traditional practice and knowledge in the Pacific are more likely to be sustainable than those which take a narrow economic, albeit environmentally safe, approach. Sensitivity is required to ensure that programmes fostered or imposed from outside the region meet the needs and take account of South Pacific cultures.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- integrate traditional resource management practices into environment and development activities
- promote the identification and use of traditional knowledge and techniques for resource management, specifically in connection with conserving and maintaining the diversity of biological resources.

Non-governmental organisations (NGOs)

Objective

To affirm the right of individuals and NGOs to have access to all available information, to be informed about environmental issues relevant to them, and to participate in the formulation and implementation of decisions likely to affect their environment

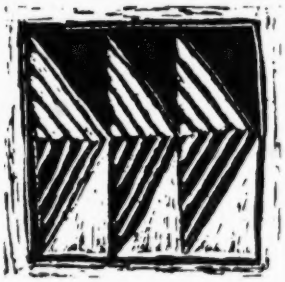
Basis for action

Non-governmental organisations (NGOs) have an important role to play in the implementation of sustainable development in our region. Many NGOs work closely with local communities to develop practices that will be sustainable for our countries as a whole. In a region where human resources are often limited, extra hands with special skills, educators and organisations with the appropriate technical, human and financial resources are a significant part of our efforts to achieve sustainable development. Working so closely with local communities throughout the region, they need access to information that is relevant to the implementation of sustainable development.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- support community groups and organisations in developing their own media skills and publications
- draw the attention of all civic organisations to the relationships between population impacts and environmental problems
- encourage, through education and training, NGOs and other indigenous community groups and individuals to increase their involvement in environmental decision-making.



MEANS OF IMPLEMENTATION

Financial resources & mechanisms

Objective

To ensure effective application of funding from within national budgets and international sources to the protection of the environment and achievement of ecologically sustainable development in the region

Basis for action

The achievement of sustainable development will require new types of international funding as well as adjustments in our national development policies. That assistance and those policies will be based on a clearly defined set of needs, priorities and strategies for each individual country and island. At the same time we strongly support the use of regional organisations as implementing agents for sustainable development initiatives.

As can be seen from the *Activities* already listed, considerable effort and investment will be required to implement sustainable development in our region. The activities cover a variety of issues and constraints and therefore flexibility in the allocation of funds and the design of funding mechanisms will be important. Assistance is clearly required for activities at all levels — community, national, regional and global — as is sensitivity to the needs and traditions of local communities. Capacity building will obviously require the attention of any new funding arrangements. Financial mechanisms which meet these requirements will by necessity be transparent and responsive to both donors and recipients.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- provide development assistance that ensures the protection and restoration of sensitive or threatened environments
- provide, in response to the priorities of PIDCs, financing for the technical assistance needed to enable developing countries in the Pacific region to accede to and implement international environment agreements and protocols
- explore participation of a wide range of private sector organisations, including specifically corporations and foundations, in implementing sustainable development
- ensure an adequate financial base for environmental management activities by attracting and allocating appropriate funding, especially long-term funding, including finance from sources in the private sector
- ensure greater co-ordination among donors and implementing agencies as they seek to meet priority needs in the region.

Transfer of environmentally sound technology

Objective

To facilitate the transfer of affordable and appropriate technologies, along with the associated development of human resources, skills and training, research and information sharing

Basis for action

The transfer of environmentally sound new technology must itself be sustainable. Addressing the limited infrastructure and the lack of capacity to provide ongoing maintenance and repair is integral to technology co-operation with PIDCs.

We welcome increased technical co-operation with industrial countries and also with other developing countries in order to adapt traditional Pacific island practices to technologies which are even more productive and are also environmentally sound. We also find that management and technical expertise relevant to the sustainable development of natural resources is scarce and therefore believe that the transfer of skills and expertise is also an essential part of technology co-operation.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- develop and disseminate economically sustainable, clean, renewable, moderate-scale energy production technology in co-operation with PIDCs, initially to complement but eventually to replace existing unsustainable energy systems in the Pacific
- support management and expertise for ecologically sustainable development
- give high priority to continuing research, development and transfer of technologies that increase energy efficiency or provide alternative sources of energy
- appropriately adapt technologies for coastal engineering, freshwater reticulation, sewerage, public health, food processing, export promotion, pollution monitoring and control, and waste management in PIDCs.

Capacity building in developing countries

Objective

To strengthen national and regional capabilities, institutional arrangements and financial support, to plan and manage sustainable development

Basis for action

It will not be possible to implement sustainable development without the human, technical and financial resources to do so. It is clear from this report that we do not have sufficient capacity — there are few trained Pacific Islanders for the monitoring and analysis of environmental information and stronger links are needed between economic and environmental planners. We define capacity-building broadly to include not only the full training and apprenticeship of personnel but also the provision of institutional and financial resources.

The region is doing what it can to strengthen its regional institutions involved in sustainable development. At a national level much is being done, including the preparation of National Environment Management Strategies that will provide a sound basis for capacity building within PIDCs.

Promoting education, training & public awareness

Objective

To increase through education, training and information dissemination the overall awareness and understanding of the environment and cultural heritage, and to promote positive community attitudes towards the environment

Activities

To implement sustainable development in PIDCs it will be necessary to:

- continue international assistance in building local capacity to assess, monitor, conserve and enhance environmental values as well as to apply, adapt, absorb and maintain environmentally sound and locally appropriate technologies
- increase training of technicians, scientists and decision-makers to cope with all aspects of planning and implementing programmes of sustainable development
- build legal, regulatory and other administrative infrastructure.

Basis for action

Learning about natural systems and their importance to social and economic development is a lifelong process. The need for education on the interrelationships between environmental management and sustainable programmes of social and economic development is common to all Pacific island countries.

Steps to raise public awareness and motivation at the grassroots level, through education, training and broad dissemination of relevant information, go hand in hand with access to information for leaders and decision-makers. We are also incorporating environmental values and information into the formal education system. We have found it particularly useful to take steps to preserve and build on the natural resource management skills of indigenous peoples.

There are many other avenues for conveying messages of environmental importance to the village level which have yet to be fully developed within the region. These include the use of the religious ministry as a channel for environmental and related social concerns; of agricultural, fisheries, health and other governmental extension staff; and particularly of church and non-sectarian organisations for women and youth.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- encourage professional development of environmental managers and conservation bodies through scholarships and exchange schemes
- assist schools and education departments to produce their own primary and secondary curricula in environmental education
- assist with the training of teachers in developing strategies and resources for environmental education in schools
- produce educational resources on environmental issues and concerns relevant to the region in an interesting and informative way, where possible in vernacular languages
- encourage the raising of community environmental awareness through the arts, theatre, music and the media
- disseminate scientific/technical information on environmental concerns for management and conservation purposes through the publication of meeting reports and topic studies
- promote community awareness through production of visual, print and electronic media including posters, displays, audio-visual kits, radio and video material.

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International institutional arrangements, legal instruments & mechanisms

Objective

To provide effective international, regional and institutional, legal instruments and planning and management mechanisms to ensure protection and environmentally sustainable utilisation of natural resources

Basis for action

At a national level the absence of specific environmental legislation is a major constraint to sustainable development. Where such legislation exists it is sometimes difficult to administer and enforce. Consequently countries see the review of existing legislation as a high priority and reviews have become an integral part of the National Environment Management Strategies currently in preparation.

For the region, the legal and institutional framework for the achievement of ecologically sustainable development is found largely in existing multilateral conventions and organisations. In particular, the framework for environmental protection at the regional level is provided by the SPREP and Apia Conventions and in the Action Plan of the SPREP Secretariat.

Regional co-operation is essential if environmental concerns in the South Pacific are to be effectively addressed. Recently, we have taken steps to give SPREP the status of a fully autonomous regional organisation. We have also declared our commitment to work together to develop whatever further legal framework may be needed to protect the regional environment, to facilitate the implementation of relevant regional conventions, and to enhance regional and national capacities for sustainable development. This includes the global conventions on climate change and biological diversity.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- make the fullest use possible of government and existing institutions and expertise, in co-operation with appropriate regional bodies such as the South Pacific Organisations Co-ordinating Committee
- encourage all eligible countries to accede to the Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific and its protocols
- support ratification of the Law of the Sea Convention
- recognise SPREP as the regional organisation responsible for environmental co-ordination, protection and management for the South Pacific
- take steps to improve working relationships among the UN Environment Programme, UN Educational, Scientific and Cultural Organization, International Oceanographic Commission, International Maritime Organization, Food and Agriculture Organization, International Atomic Environment Agency, and Office for Ocean Affairs and Law of the Sea Secretariat
- review existing legislation relating to environmental management and recommend improvements as required at the request of members.

Developing effective planning & management

Objective

To ensure that economic development activities are carried out in an environmentally sound and sustainable manner

Basis for action

Government administration processes in many Pacific countries still have a strong economic and financial focus; environmental considerations are rarely given that weight which is vital in the sustainable development planning process. We have declared our commitment to integrate environmental considerations with economic and sectoral planning and policy making and to formulate resource utilisation policies in accordance with the precautionary principle. But we need to adjust our planning and management systems to integrate considerations such as population trends, consumption patterns, health and nutrition concerns, educational standards and requirements, the availability of both traditional and innovative technologies, financing considerations, and the complementary roles of public and private sector organisations.

An important step in the development of effective planning and management is the preparation of National Environment Management Strategies, or equivalent National Plans, which will integrate natural resource management requirements with economic development objectives. These are currently being prepared in almost all PIDCs. Co-ordination of this work within each country is by Task Teams consisting of representatives of relevant government departments, NGOs and the private sector.

Each strategy is developed through a process that involves (a) gathering comprehensive information on the state of the environment and on relevant sectors (including, for example, agriculture,

fisheries, forestry, tourism, public works and urban infrastructure), (b) undertaking detailed review of laws, regulations, and institutional mechanisms for environmental protection, (c) evaluating educational policies, institutions and activities; and (d) facilitating discussion among government departments, private organisations and businesses and individual citizens.

The resulting strategy takes the form of an agreed statement of the country's environmental principles and a detailed plan for the realisation of environmental goals. Associated with the development of the strategy is a process of in-country training to suit the country's needs as identified by the national Task Team.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- use an ecosystem approach when formulating or administering a resource management system rather than considering the needs of individual species
- develop guidelines and implement procedures for Environmental Impact Assessment
- take into account the probable impacts on other resource users and environments when evaluating particular development proposals.

Providing data & information for sustainable development

Objective

To encourage research based on national and regional priorities relating to environmental policy, management and planning needs and decision-making

Basis for action

The availability of data and information for sustainable development is essential to the future of our region. Major surveys are currently underway in all these countries to upgrade terrestrial information but there is an urgent need throughout the region for far greater effort on marine and coastal resource surveys, and for wildlife surveys and research on wildlife ecology. With greater emphasis on collection, storage and analysis of data for sustainable development also comes the need for computerised database systems which are simple to use and do not require advanced computer skills.

Activities

To implement sustainable development in PIDCs it will be necessary to:

- assess the state of the environment in the region including the impacts of human activities on ecosystems in the region and the effects of those impacts on the quality of the human environment
- disseminate up-to-date and accurate information on regionally significant environmental concerns
- undertake national and regional surveys of biological diversity and assist with the development of appropriate resource databases to encourage the conservation of biological diversity and sustainable utilisation of resources
- generate and disseminate information on the sources, levels, amounts, kinds, trends and effects of pollution and the kinds and amounts of wastes, waste-generating activities and disposal methods within the South Pacific region.